EM ACOUSTICS

TECHNICAL DATA SHEET

AQ-10

switchmode power amplifier

FEATURES AND BENEFITS:

- renowned MC² sonic performance and build quality
- Class D design for low weight and incredible power reserves
- Power Reduction Circuitry
- Full DC and short-circuit protection
- Bridge/mono operation

The AQ-10 is a lightweight switchmode four-channel power amplifier designed to give the best performance from any loudspeaker within the EM Acoustics product range.

Designed by MC² Audio, the AQ-10 utilises proprietary Class-D amplifier technology, combined with a dual feedback loop system to give excellent transient response. The resonant power supply has a very large power reservoir, which allows the AQ-10 to deliver high transients without any perceptible "bass sag". This, along with the aluminium chassis construction are the keys to the very low weight, which makes the AQ-10 as ideal for touring applications as it is for fixed installations. The design of the AQ-10 utilises a progressive switching rail output, which enables the high voltage swings required to produce peak power capability without compromising the sonic performance. As such, the AQ-10 is as at home amplifying the nuances of a theatrical performance as it is reproducing bass lines in a nightclub or touring environment.

The AQ-10 also features newly designed limiters, which are linked to the output current monitors and power supply which keep mains input and output currents within safe operating limits at all times, whilst maintaining the transparent sonic performance required. The inbuilt Power Reduction Control is also tied into these limiters – as well as the power supply, and continually monitors these as well as load, temperature and other operating parameters. Activated via recessed switches on the rear panel, the PRC effectively reduces the available power output from the amplifier. This allows the user to set the AQ-10 to have a maximum power below its rated output, ensuring the best possible match to a wide variety of different loudspeakers and improving overall system reliability.

The front panel for the AQ-10 carries the AC mains power switch and indicator LED, as well as a simple and intuitive set of indicators. 5-segement LED meters show audio signal presence and level (-24dB, -12dB, -6dB, -3dB and limit). Indicators for channel input link, PRC activation, bridged mode and audio protection are provided. Each channel also has a multi-detent analogue level control allowing precise signal level settings when in use. Amplifier protection is also an area where the AQ-10 delivers completely. A soft-start sequence with complete inrush protection means the AQ-10 powers up completely muted, and then gradually fades the input up to the previous level. A comprehensive diagnostic circuit constantly monitors load, temperature and other parameters and automatically adjusts the power supply if overheating or any other problems occur. Output short circuit and DC output are also protected – and the AQ-10 will only require a manual restart if output short circuits occur.

The AQ-10 is built around a 2U all-metal chassis, which provides a roadworthy package whilst keeping the weight low. Handles are included within the front 5mm thick fascia panel. A rackmount kit is also supplied to enable the amplifier to be secured at the rear for additional stability. Low-noise variable speed fans are fitted to the AQ-10 (cooling is from front to rear), along with a reticulated foam dust filter which can easily be removed for cleaning.

The rear panel houses the Neutrik XLR input connectors, along with output connectors on SpeakON™ NL4. The captive AC mains power cable is also presented on the rear panel, along with the recessed switches for bridged mode (channels bridge in pairs), input signal link (link A-B, link B-C, link C-D) and the PRC controls for each channel.

TECHNICAL SPECIFICATIONS

Amplifier class & channels :	D, 4 channels
Output Power :	1150W/ch @ 8 ohms, 2250W/ch @ 4 ohms, 3200W/ch @ 2 ohms 4500W @ 8 ohms (bridged), 6400W @ 4 ohms (bridged) (Measured with continuous sine wave @ 1kHz)
THD :	<0.08% @ 1kHz, <0.15% 20Hz - 20kHz (measured @ 1dB below max output power)
Gain/Sensitivity :	26 / 32 / 36dB, Sensitivity for maximum power +16 / 10 / 6dBu
Frequency Response :	20Hz - 20kHz +/- 0.5dB
Power Consumption :	7.0A nominal @ 240V, 14.0A nominal @ 120V (with 4 ohm load)
Input Impedance :	20k ohms (active balanced)
Input CMRR :	> 60dB
Damping Factor :	400 (8 ohms / 1kHz)
Signal-to-noise Ratio :	Better than 105dB (unweighted, 22Hz - 22kHz)
Signal Limiters :	Operate at maximum power to prevent signal clipping
Protection :	Output short circuit, DC output, over-temperature, mains in-rush control
Dimensions (HxWxD) :	88 (3.5) x 482 (18.9) x 428 (16.8) mm (ins)
Net Weight :	11.8kg/26lbs
Shipping Weight :	13.8/30.4lbs